

Commonwealth of Kentucky
Division for Air Quality
PERMIT STATEMENT OF BASIS

Title V – Draft Permit No. V-03-023Revision 1
University of Kentucky
Room 215, Peterson Building
Lexington, Kentucky 40506
August 11, 2004
Shanaka Ewing, Reviewer
Plant I.D. #: 21-067-00003
Application Log #: 56520

SOURCE DESCRIPTION:

Applications to modify their operating permit application were received from The University of Kentucky on April 29, 2004 and June 23, 2004, and called complete on July 23, 2004. The modification includes installation of two 73mmBtu/hr natural gas fired boilers, a 4000 horsepower diesel generator, and a 20,000 gallon diesel fuel storage tank. The modification applications also included corrections to the initial Title V application submitted to the Division in 1998. Additions in this application include 65 diesel generators ranging from 1 horsepower to over 2885 horsepower (installed between the years 1963 to 2002), five large underground storage tanks for diesel fuel, jet fuel and unleaded gas (constructed between 1972 and 1999), 79 small diesel fuel storage tanks (constructed between 1972 and 1999), and 37 indirect heat exchangers (consisting of 2-125 mmBtu/hr natural gas-fired units, 2-94 mmBtu/hr coal-fired units, 2-75 mmBtu/hr coal-fired units, 2-144 mmBtu/hr natural gas fired unit, and 29-<10 mmBtu/hr units). Two paint spray booths were included which have been permitted since October, 2003. The spray booths have a 2.0 gallons/hr maximum operating rate.

COMMENTS:

Based on the information provided, the Division concluded that 401 KAR 59:015 applies to the new boilers that were constructed after 1972, and 401 KAR 61:015 applies to the existing boilers constructed before 1972. 401 KAR 59:010 applies to the paint spray booths. There are no applicable regulations for the diesel-fired generators, the underground storage tanks, jet fuel tanks, unleaded tanks and the small diesel fuel storage tanks.

OTHER REGULATION APPLICABLE TO EMISSION UNITS (EU) 51 & 52 DUE TO APPLICABILITY DATE OR SIZE OF UNIT:

401 KAR 60:005, incorporating by reference 40 CFR 60, Subpart Dc, Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units, applicable to a steam generating unit with a capacity of less than 100 mmBtu/hr but greater than 10 mmBtu/hr which commenced on or after June 9, 1989.

EMISSION AND OPERATING CAPS DESCRIPTION:

The source has the potential to be a major source for nitrogen oxides (NO_x) and sulfur dioxide (SO₂) emissions. However, the source has requested a federally enforceable limit to the modification to cap the natural gas and the fuel oil usage to 624 mmfc/yr and 706,800 gallon/yr respectively for both boilers. In addition, the facility is installing Lo-NO_x burners (which produce 30ppm or 0.036 lb/mmBtu NO_x, and carbon monoxide (CO) at 100 ppm or 0.075 lb/mmBtu per boiler) to reduce emissions from the units. This is being done to keep emissions below significant net emission rates and to preclude applicability of regulation 401 KAR 51:017, Prevention of significant deterioration of air quality. Additionally, diesel fuel usage and hours of operation for the 2885 hp emergency generator shall not exceed 27,000 gallons per year and 200 hours respectively. The emissions from both new boilers (EU 51 & 52) and the emergency generator (EU 53) shall not exceed 30 tons per year of nitrogen oxides, 26 tons per year of sulfur dioxide, and 32 tons per year of carbon monoxide. Based on the emissions calculations, the Division has determined that this will be a significant modification to the existing Title V permit (401 KAR 52:020, Section 16), therefore requiring a public review (401 KAR 52:020, Section 25). Emissions were calculated based on current AP 42 emission factors and vendor guarantees on nitrogen oxides and carbon monoxide for the boilers, which were submitted by the permittee to the Division. Additional information used in making this review was obtained from file records.

CREDIBLE EVIDENCE:

This permit contains provisions that require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has not incorporated these provisions in its air quality regulations.